Conclusions: Our project has identified a large number of pain features that can be assessed when patients have chronic pain after TKR. Standardisation and improvements in assessment is needed to facilitate comparisons of results across studies and the identification, and treatment of patients. This project will move towards standardising assessment through the development of a small core set of pain features to assess in trials focusing on chronic pain after TKR.

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CONTRALATERAL KNEE EFFECT ON FUNCTIONAL ASSESSMENTS – DATA FROM THE OSTEOARTHRITIS INITIATIVE (OAI)

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Purpose: Treatment of symptomatic knee OA by intra-articular injection is expected to result in improvement of the injected knee. However, the impact of the contra-lateral knee status on functional tests and self-reported knee function is unclear. The purpose of this study was to estimate the sensitivity of functional performance measures, when one of the two knees is successfully treated.

Methods: The two-year (Y2) clinical data from the Osteoarthritis Initiative (OAI, 4796 participants, version 3.2.1) were used. To identify subjects with discordant pain status, we selected OAI participants who fulfilled the following criteria: a) one knee with non-acceptable symptom state (NRS $\geq$ 4; 0–10 = no to worst pain) and frequent (Sx2) or infrequent pain (Sx1) over the past 12 months, b) the contralateral knee without pain (NRS = 0; SX0/1), and c) complete information on age, sex, BMI and KLG (central readings) at Y2 for matching purposes. This selection process resulted in 378 cases with discordant pain. These were compared with OAI participants with bilateral pain-free knees (NRS = 0, Sx 0/1; n = 898 with complete information), to estimate the effect of successfully treating a painful knee in a patient with unilateral knee pain. In 359 of these, one of both pain-free knees was successfully matched to the pain-free knee of the discordant cases by same limb dominance status, KLG (0–1 or 2–4), and sex, age ± 3y, BMI ± 3 kg/m^2. In a next step, discordant cases were compared to OAI participants with bilateral knee pain (NRS$\geq$4; Sx1/2; n = 534 with complete information), to estimate the effect of successfully treating one of both painful knees. In 323 of these, one of both painful knees was successfully matched to the painful knee of the discordant cases, using the same criteria as above. The WOMAC function score (17 items, 0–68, no to severe limitations), the physical activity score of the elderly (PASE; 0–793, least to most active), the chair stands time (5 repeats), 20 m walking, and the 400 m walking test results were compared between the three groups, using paired t-tests. As a measure of effect size, the standardized response mean (SRM = mean/standard deviation [SD] of pairwise differences) was used, to account for the matched pair design.

Results: The sample with discordant pain consisted of 55% women (age 63.9 ± 9.3 y [mean ± SD]; BMI 28.7 ± 4.5) and the demographics were very similar in those with bilaterally painful and pain-free knees. In those with discordant pain status, the WOMAC functional limitation score in the painful knee (11.4 ± 9.6) was significantly higher (p = 4.02E^{-67}) compared to the contralateral pain-free knee (1.2 ± 4.0). The functional limitation score in the matched pain-free knees of bilateral pain-free participants (0.53±1.8) was significantly lower compared to the pain-free knee of the discordant cases (mean pairwise difference −0.71 ± 4.5; 95%CI: [−1.18; −0.24]; p = 0.003). In contrast, the functional limitation score in the matched painful knee of the bilaterally painful participants (16.9 ± 10.8) was significantly higher compared to the painful knee of the discordant cases (mean pairwise difference −5.7 ± 12.9; 95% CI: [−7.1;−4.3]; p = 8.22E^{-14}.
There was no significant difference in the self-assessed PASE between discordant, bilaterally painful and bilaterally pain-free cases (Tables 1 & 2), but there were significant differencme="col6" tnq_colwidth="2*"/ >es in the 20 m and 400 m walking times. The 5 chair stands time discriminated best between the 3 samples.

Table 1
Functional tests: comparison between discordant cases vs. bilaterally painfree cases

	Discordant	Bilat painfree	Mean pair diff		p value	
Test (n =)	***N* = 359**	***n* = 359**	[95% CI]		(paired t)	SRM
PASE (353)	148 ± 73.3	145 ± 80.8	2.3 ± 104	[−8.6; 13.2]	0.679	0.02
Chair stand time (321)	10.6 ± 2.9	9.6 ± 2.3	0.97 ± 3.5	[0.59; 1.36]	9.63E^{-7}	0.28
20 m walk time (346)	15.6 ± 2.9	15.2 ± 2.3	0.38 ± 3.5	[0.01; 0.75]	0.042	0.11
400 m walk time (287)	310 ± 48.2	301 ± 41.6	9.0 ± 57.2	[2.3; 15.6]	0.008	0.16

Table 2
Functional tests: comparison between discordant cases vs. bilaterally painful cases

	Bilat Painful	Discordant	Mean pair diff	p value	
Test (n =)	***N* = 323**	***n* = 323**	[95% CI]	(paired t)	SRM
PASE (316)	151 ± 81.3	149 ± 74	2.2 ± 99 [−8.8; 13.2]	0.693	0.02
Chair stand time (270)	12.0 ± 3.5	10.6 ± 2.8	1.4 ± 4.2 [0.88; 1.90]	1.72E^{-7}	0.33
20 m walk time (306)	16.3 ± 3.3	15.6 ± 2.6	0.70 ± 3.8 [0.26; 1.13]	0.002	0.18
400 m walk time (245)	323 ± 59	308 ± 47	14.6 ± 65.6 [6.3:22.8]	0.001	0.22

Conclusions: Self-assessment of functional limitations in one knee appears to depend on the status of the contralateral knee: In a knee without pain, functional limitation is perceived as more severe when the contralateral knee is painful. In a painful knee, functional limitation is perceived as more severe when the other knee is painful too, compared to the contralateral knee being pain-free. The results suggest that the chair stands time may be the most sensitive in demonstrating functional improvement when pain in (only) one knee is successfully treated. This appears to apply to both unilateral and bilateral baseline knee pain.

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CHALLENGES TO PARTICIPATION IN ACTIVITY FOLLOWING TOTAL JOINT REPLACEMENT: THE PERSON, THEIR HEALTH AND THEIR SOCIO-CULTURAL CONTEXT

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